HJR 153 FEASIBILITY STUDY

GENERIC QUESTIONS

1. **Please identify the major issues/questions that should be addressed by the HJR153 feasibility study.**

Although ODP lists numerous issues, a full cost versus benefit analysis must be conducted. ODP questions whether undergrounding is an actual need or based mostly on aesthetics. The major issues are:

- Who pays for OH to UG conversion, investors, customers, taxpayers? How do you apportion conversion costs and future economic benefit to the various expectations of the individual stakeholders?
- Study the feasibility based on "societal economic good" rather than on "individually focused non-economic benefit such as aesthetics."
- Define distribution voltage levels covered by HJR153 and the portion of facilities to be converted (mainline, branch lines, 3ø, 1ø, secondary, services, etc.)
- Since trees are the predominant cause of OH system disturbances and damage, ensure that the costs/benefits of OH to UG conversion are evaluated fairly against balanced vegetation management solutions. Should the tree owner be liable for ongoing damages and injury caused by trees?
- Older easements are OH "prescriptive" easements that do not permit UG rights. How will new/amended easements be granted from all property owners in a timely manner, for converting OH to UG, in order to eliminate delays in construction?
- If an initiative is undertaken, which customers, localities, or system components will be first, which last?

2. **Please describe the potential benefits to the public and utility companies associated with the undergrounding of overhead distribution lines.**

There are obvious benefits associated with undergrounding and the differentiation between relocating existing overhead lines versus the installation of new lines greatly affects those benefits. Some of the potential benefits are:

- Increased public safety for reduced incidence of wires and poles down, vehicle/pole accidents, and electrocutions from crane and mast impacts.
- Improved reliability (outage frequency component)
    - Reduced outages during storms, wind, precipitation, ice, direct lightning strikes.
    - Reduced vehicle damage incidence to poles along ROW.
    - Reduced wildlife incidence.

- Reduced vegetation management expense (trimming in utility easements.) Some vegetation expense continues in order to manage vegetation growing adjacent to UG equipment.
- Increased tolerance for trees growing outside of the utility easement.
- Opportunity to renew distribution infrastructure.

  In the near term, UG easements can support higher electric and communication circuit densities, especially in joint trench applications; however, wider easements may be required to accommodate parallel corridors for subsequent replacements or new occupants.
- Permits closer proximity between electric and communications infrastructure.
- Lower delivery losses resulting from larger and more compact UG cable constructions.
- Improved aesthetics.

3. Please describe the potential negative impacts on the public and utility companies associated with the undergrounding of overhead distribution lines.

Due to the fact that underground technology has not existed as long as overhead technology, much shorter time periods exist in order to conduct studies and comparisons. Also, the more developed an area, the more difficult the obtainment of easements may be. In general, potential negative impacts include:

- Higher cost of service associated with the following:
  - Capital costs
    - Higher installation costs associated with trenching, surface restoration, boring, and rock removal, especially in severe terrain.
    - More expensive cable, equipment, and connection costs.
    - Installation of UG systems in established neighborhoods risk damage to pre-existing buildings and structures during trenching, boring, and rock removal activities.
    - Protective infrastructure and accessibility (ductlines, manholes).
    - Higher capacity costs (lower thermal limits and overload tolerances)
    - Shorter UG equipment life cycles (cable, cable accessories, equipment).
    - More expensive lightning protection and sectionalization schemes. More complex and expensive protective device coordination.
    - Requires redundant capacity and infrastructure to minimize outage length.
    - Requires redundant parallel routes for the new UG and old OH infrastructure during the term of the conversion activity.
    - Higher ultimate UG replacement costs at end of life cycle.

- Operating costs

  Longer failure analysis and outage restoration time.

  Greater need for updated and detailed maps, switching schematics.

  - Increased facility location costs.

    UG protective devices and equipment require additional lateral space and clearance for safe operation.

- Maintenance costs
  - Longer repair intervals.
  - Requires specialized equipment and repair crews.
  - Higher cost repair materials and diagnostic equipment.
  - Higher 3rd party excavation damage rates.
  - Aggressive subterranean environment (water, chemicals, corrosion, etc)
  - Higher inspection costs driven by confined space, padmount equipment, and subsurface enclosure access requirements.

Aesthetic concerns posed by placement of UG above ground equipment.

- May require additional/multiple short term interruptions following repairs to switch back to normal circuit configuration (open-transition switching).

4. Please describe in detail the potential obstacles associated with the implementation of a program to relocate overhead distribution lines to underground (for example, statutory, regulatory, technological, economic, safety. and physical obstacles).

Other than the typical physical issues of rock removal, existing street light poles and the amount of space in heavily populated downtown areas, the issue and ease of obtaining easements must also be resolved. Obstacles include:

- Public ROW and utility easement occupancy standards to eliminate random access conflicts.
- Encourage joint utility trench and/or utility corridors to minimize conversion cost.
- Require casings and ductline systems to facilitate future maintenance and replacement activities without disruption to public and adjacent utility systems.
- Eliminate "eminent domain" agreements that burden utilities with the full relocation costs in public way.
- Customer service drop conversions may require customer equipment upgrades and rewires to conform to current codes and standards. For example, an existing customer with a 2 wire 60 amp OH entrance may be required to rewire to a 3 wire 100 amp UG entrance, install a private UG service drop under existing driveways, trees, landscaping, etc. Some local codes may impose additional upgrades beyond the customer entrance panel.

- Existing street lighting on OH distribution poles would need to be replaced with UG lighting standards. Local standards may require upgrades in illumination and lighting patterns during a conversion.
- Third Party attachments (other than communication cables; e.g. PCS (wireless) co-location sites, traffic control equipment, & street signs) may need to be remounted on new support structures.

5. Please describe the process for identifying and securing right-of-way easements for the relocation of existing overhead distribution lines to underground. What property rights issues would be raised as a result?

The ODP process is straight-forward. Undergrounding develops new easement issues such as who pays a property owner for any damage as well as the clearing of trees in the right of ways.

- **Easement Procedure (ODP)**
  - Meet on location with customer requesting service.
  - Discuss best possible route of facilities, agreeable by both customer and ODP.
  - Present customer with Utility Easement agreement and discuss.
  - The customer is responsible for filling out all the required sections in regards to deed / property information.
  - Normally the ODP Representative will stake and fill out the description of said easement, approximate location on property, distance, direction. Occasionally the customer (usually a commercial customer) may fill out this section with survey information and supply a plat / drawing to such.

    If the route requires additional easements from adjacent property owners, the customer requesting the service is responsible for acquiring said easements. ODP Representative will provide the additional easement forms, discuss the easement requirements and route; however will not act as the agent for the requesting customer in regards to acquiring said easements.
  - Any monitory requests by adjacent property owner in granting the easements are the sole responsibly of the requesting service customer.
  - All easements must be filled out properly, signed and notarized.
  - All easements are recorded by the ODP Design Technician at the Court House in each county. If additional easements from adjacent property owners were needed. ODP Representative should contact the owners, thank them, this also gives you the opportunity to confirm said easements.

- ODP is responsible for the cost of recording the easement; currently the fee is $19.00 to $19.20 depending on county.

- Currently Wise County requires the VLR Cover Sheet to be included for each easement.

  ODP files the easement at their local office, and then sends a copy to Louisville office.

- If an UG/OH conversion initiative is undertaken, the utility will have to undertake the activities normally assumed by the customer for a customer initiated request (noted above.)

- **Possible Property Rights Issues**

  - Can new underground facilities be installed within existing overhead easements and "prescriptive" easements? Easement language will determine if a new easement or an amendment to an existing easement is required.

  - In order to conform to current installation standards, UG requires new easements on both sides of the roadway adjacent to the ROW. Because of "eminent domain" issues, prefer to install in easement rather than ROW.

  - Going underground could cause clearing of trees, landscaping, etc.

  - Property owner may request to be paid for property damage due to construction.

  - Original / existing easement may need to be released in lieu of new on being granted by the property owner, if new facilities are located outside of the existing easement.

  - Telephone and cable communications facilities will need to be addressed, as they might be included in the easement verbiage.

    Will property owner incur a cost to install underground facilities?

6. **In order of importance, list the criteria that should be considered to determine whether the implementation of a program to relocate overhead distribution lines to underground is desirable.**

   As stated in response Number 1, ODP believes that a conversion to underground facilities must overwhelmingly benefit the public good economically. Potential criteria are:

- How do utilities recover conversion and relocation costs?
- Defining cost impacts:

- Total lifecycle annualized cost to the utility (capital, operating, maintenance), net of avoided tree trimming cost and incremental storm damage.
- Total annualized cost to the non-utility (taxpayer, rate payer)
- Customer conversion cost

- Assessing and quantifying benefit:
  - Incremental annualized reliability impact (assumed net benefit of all noted benefits and obstacles)
  - Public safety benefit
  - Aesthetic benefit

Does an OH to UG conversion program serve the "public good" more economically than a root cause-based tree management and facility maintenance program?

7. In order of preference, describe the potential options for funding the relocation of overhead distribution lines to underground and explain the basis of your recommendation.

ODP believes that there is no equal benefit for all customers regardless of the funding mechanism. A tax could be seen as taxation without fair and equal representation and any operational dollar benefits attributed to the undergrounding should be returned to utility ratepayers in the form of lower rates.

If conversion is justified and mandated to all members of society as a "societal benefit," then funding by taxation apportions costs to all on the basis of the tax assessment plan chosen.

- In fairness, match stakeholder funding to desired/derived benefit
  - Ratepayer (customer) funds reliability producing component
  - Taxpayer funds aesthetics producing component
  - Utility owner (investor) funds incremental improvement in plant asset value

8. Should one or more pilot programs be conducted to determine more precisely the benefits, costs and obstacles associated with the implementation of a program to relocate overhead distribution lines to underground? If pilot programs should be conducted, how could and should the pilot programs be funded?

ODP believes that if undergrounding is proven feasible, then a pilot program or programs is a must. This is due to the tremendous capital outlay required as well as the wide array of geological landscape throughout the Commonwealth.

If early studies confirm that conversion is not justified, then do <u>not</u> proceed with a pilot.

If an initial feasibility study indicates that conversion is justified, then several pilots should be conducted in different areas and on different infrastructure to thoroughly test variations and extreme applications.

- Pilot programs should be funded by the taxpayer. Until a pilot confirms cost and benefit, other stakeholders should not be assessed or mandated to participate.
- Ensure that utilities involved in pilot programs have accurate historical and current outage data (including major storm events) to provide an accurate basis to benchmark SAIDI/SAIFI/CAIDI improvement.

9. **Considering the costs, benefits and obstacles associated with the implementation of an undergrounding program, should the General Assembly require utilities to place all or a portion of existing and/or new overhead distribution lines underground? Alternatively, should such decisions be left to local government? Please explain your answer.**

ODP believes that cost versus benefit analyses must be completed prior to this decision. However new distribution installations, depending on the scope, are normally more easily justified.

- The scope of the conversion (all or portions of existing OH) depends on the comprehensive analysis of all potential alternatives.
- The scope of new UG extensions are more easily defined and cost justified but still are subject to analysis of alternatives and benefits.
- Mandated conversion and extension policies should be designed for the common good and consistently applied across the state; otherwise local government will impose varying standards and policies to utilities serving multiple localities.

10. **What obstacles, if any, currently prevent a local government from enacting an ordinance establishing all or a part of the locality as an area in which: (a) existing overhead utility distribution lines must be relocated underground over some period of time; and/or (b) all new utility distribution lines must be located underground?**

Unknown

11. **For the specific purpose of funding the undergrounding of existing overhead utility distribution lines, what obstacles, if any, currently prevent a local government from levying a special tax on the residents and businesses of an area within the locality in which the local government has enacted an ordinance requiring the undergrounding of utility distribution lines? Would such a special tax assessment require specific new authorization from the General Assembly?**

Unknown

12. Interested parties are invited also to address all other legal and policy issues they believe relevant to this investigation.

None at this time.

13. Please indicate below your desired level of participation in the feasibility study.

__ Placed on the distribution list for all correspondence.

_X_ Considered as an active participant in the feasibility study. If you wish to be considered as an active participant, please complete the following:

Field of expertise __Mike Leake – Group Leader Engineering

Organization ____LG&E Energy ("ODP")

14. If you are interested in participating as an active participant, would you be willing to serve also as a member of a subgroup to identify, research, and analyze specific issues and provide written summaries of specific topics of study?

_X__ Yes ___ No

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